β-hydroxy ketones aldol reaction

Synthesis of Pentafluorinated β-Hydroxy Ketones J. Org. Chem. 2012, 77, 8840–8844.

P. ZHANG, C. WOLF* (GEORGETOWN UNIVERSITY, WASHINGTON, D.C., USA)

Pentafluorinated β-Hydroxy Ketone Synthesis via Lithium-Mediated Aldol Reaction

 $R^1 = Ph, 4\text{-}CIC_6H_4$, Naph, $(CH_2)_2Ph$ $R^2 = Ar, 2\text{-}thienyl$, Bn

Selected examples:

Significance: A fast and mild synthesis of pentafluorinated β -hydroxy ketones has been disclosed. The reaction proceeds via a lithium-promoted aldol reaction of readily available difluoroenolate precursors with trifluoromethyl ketones furnishing the corresponding pentafluorinated β -hydroxy ketones in good to excellent yield. **Comment:** The described reaction is very versatile since it proceeds under ambient temperature and tolerates a broad range of functional groups. Furthermore, the authors show that the reduction of the pentafluorinated β -hydroxy ketones furnishes quantitatively the corresponding 1,3-diols favoring the syn-isomer.

SYNFACTS Contributors: Paul Knochel, Christoph Sämann Synfacts 2013, 9(1), 0089 Published online: 17.12.2012 **DOI:** 10.1055/s-0032-1317735; **Reg-No.:** P15712SF